

BACTERIAL FIMBRIAL SYSTEM FOR PRESENTATION OF HETEROLOGOUS
PEPTIDE SEQUENCES

ABSTRACT OF THE DISCLOSURE

The invention provides a system for creating recombinant *agfA* fimbrin genes and performing chromosomal gene replacements within *Salmonella*, creating *Salmonella* strains which carry the recombinant *agfA* genes at the native position in the chromosome. One embodiment of the invention is exemplified by the expression of a model epitope (PT3) obtained from the GP63 protein of *Leishmania major*, by formation of recombinant *agfA* genes encoding PT3 fusion proteins recombined at 10 different sites throughout the *agfA* gene. These fusions are shown to be expressed in the thin aggregative fimbriae on the surface of bacterial cell. The AgfA fimbrin of *Salmonella* (CsgA for *E. coli*) provides a flexible and stable vehicle for the expression of foreign epitopes in *enterobacteriaceae* and the subsequent thin aggregative fimbriae (curli) expression product provide an ideal organelle for presentation of the foreign epitopes at the cell surface.

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